

Marine Debris in Gulf of the Farallones and Monterey Bay National Marine Sanctuaries

For more information on the project visit <http://farallones.noaa.gov/science/marinedebris.html>

Program Overview

Following the 2011 Japanese earthquake and tsunami, NOAA funded Gulf of the Farallones National Marine Sanctuary (GFNMS) to establish four monitoring sites within GFNMS and Monterey Bay National Marine Sanctuary (MBNMS) as part of the Marine Debris Monitoring and Assessment Program (MD-MAP). Evaluation of tsunami and other sources of marine debris at these sites establishes year-round baseline data on debris types, abundance, movement, frequency, and distribution. Data also assists marine resource management through education and outreach opportunities and prospective site-specific, regional, and national applications.

Methods

Citizen scientists perform stratified random sampling of marine debris ≥ 2.5 cm, every four weeks using NOAA designed protocol and survey sheets (Figure 1). Beach sites are in four remote locations, in areas with low recreational use away from outflow sources, located at Drakes Beach, South Beach, and Limantour Beach in GFNMS and North Point Beach in MBNMS. Surveys assess 20% of each 100m long site, recording items in seven different categories: plastic, wood, metal, rubber, glass, fabric, or other (Figure 2). All Data is entered into an online MD-MAP database.

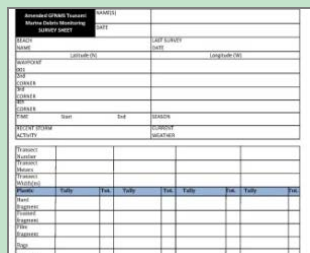


Figure 1. Survey sheet sample.



Figure 2. Surveyors at South Beach.

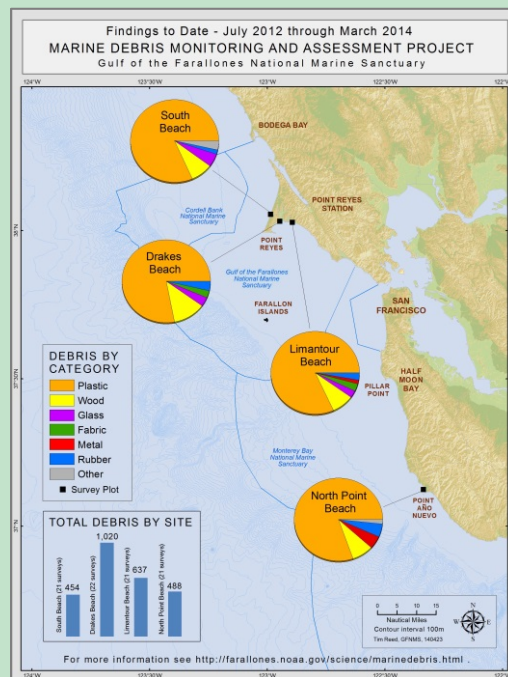


Figure 3. Location, categories, and totals of all items recorded July 2012 – March 2014.

Preliminary Findings

From July 2012 - March 2014 a total of 85 surveys were conducted, with 2,599 debris items recorded, and zero items reported as tsunami debris. Plastic items, namely hard plastic fragments, represent over 75% of all items recorded at each site, followed by treated lumber (Figure 3). The largest concentration of debris items have been recorded at the Drakes Beach site. Additionally, other than the Limantour site, data shows an increase in debris deposition when surveyed within one week after a storm event (Figure 4).

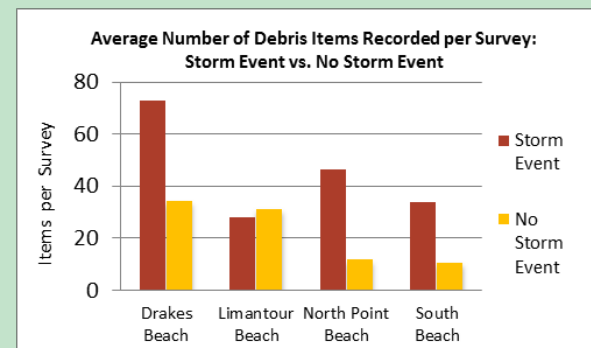


Figure 4. Average number of items recorded per survey storm (rain within one week prior to survey) and non-storm events.

